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I, JULIE BILLINGSLEY, TEAM LEADER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. 2002952319 for a patent by ARISTOCRAT TECHNOLOGIES AUSTRALIA PTY LTD as filed on 29 October 2002.

WITNESS my hand this  
Third day of November 2003

5

A handwritten signature in cursive script, reading 'J. Billingsley'.

JULIE BILLINGSLEY  
TEAM LEADER EXAMINATION  
SUPPORT AND SALES

# **AUSTRALIA**

## **Patents Act 1990**

**Aristocrat Technologies Australia Pty Ltd**

### **PROVISIONAL SPECIFICATION**

*Invention Title:*

*Gaming Machine with Mine Feature*

The invention is described in the following statement:

## *Gaming Machine with Mine Feature*

### **Field of the Invention**

This invention relates to a gaming machine. More particularly, the invention relates to a gaming machine and to an improvement to a game  
5 played on such a gaming machine.

### **Background to the Invention**

Players who regularly play gaming machines quickly tire of particular games and therefore it is necessary for manufacturers of these machines to  
10 develop innovative game features which add interest to the games. In so doing, it is hoped to keep players amused and therefore willing to continue playing the game as well as to attract new players.

Also, with the growth that has occurred in the gaming machine market, there is intense competition between manufacturers to supply various existing  
15 and new venues. When selecting a supplier of gaming machines, the operator of a venue will often pay close attention to the popularity of various games with their patrons. Therefore, gaming machine manufacturers are keen to devise games and/or game features which are popular with the players as a mechanism for improving sales, retaining customers and attracting new  
20 customers.

In addition, players enjoy having greater interaction with a game such that they feel that they can have an effect on the outcome of the game. However, due to very strict compliance regulations which need to be satisfied in various jurisdictions, it is difficult, if not impossible, to include high levels of  
25 player skill in game features of gaming machines. It is desirable to include features where pseudo-skill is involved in the feature which, the applicant believes, will enhance player enjoyment.

### **Summary of the Invention**

30 According to a first aspect of the invention, there is provided a gaming machine having a display means and a game control means arranged to control images of symbols displayed on the display means, the game control means being arranged to play a game wherein at least one random event is caused to be displayed on the display means and, if a predefined winning event  
35 occurs, the machine awards a prize, the gaming machine further comprising a

game feature where, upon being awarded at least one prize, a player is offered a choice and, if the choice results in a successful outcome, the feature continues but, if the choice results in an unsuccessful outcome, the feature ends and a portion of a total prize accumulated up to termination of the feature is forfeited.

More particularly, upon being awarded at least one prize, the player may be offered the opportunity to continue to attempt to accumulate further prizes and, at the player's option, for so long as the player is successful in accumulating further prizes, the feature continues but, if the player is unsuccessful, the feature ends and only a part of a total prize accumulated up to termination of the feature is awarded to the player. It will be appreciated that, after the player has obtained a successful outcome, the player may decide to end the feature and to take the winnings from the feature which have been awarded to date rather than continuing with the feature and risking said portion of the prize.

The game feature may be a second screen feature which is triggered when a predetermined trigger condition occurs in a base game. The particular feature to which the invention is applicable is a second screen feature following the Applicant's "Outback Jack<sup>TM</sup>" game. The trigger condition of the Applicant's Outback Jack game has been described in the applicant's co-pending Australian Provisional Patent Application No. 2002950966 entitled "A gaming machine with variable trigger" filed on 23 August 2002. The contents of Australian Provisional Patent Application No. 2002950966 are specifically incorporated herein by reference.

When the game feature commences, the underlying game may be replaced by a screen display of the game feature. The screen display may display a paytable that indicates the number of credits that will be paid for various outcomes which occur during the playing of the feature. Further, the screen display of the second screen feature may include a prize meter which provides a cumulative total of the successful outcomes which have occurred during the playing of the feature.

When the initial screen display is displayed on the display means, the player may be alerted to commence the feature by pressing a "Start Feature" button on a midtrim of the gaming machine.

At least a first outcome may be guaranteed to be a successful outcome where a player is awarded a prize of a number of credits multiplied by the total

bet. If desired, a second outcome may also be guaranteed to be a successful outcome.

Any subsequent outcomes may be playable at the player's option. Hence, an apparent level of skill is imparted to the game where the player has  
5 a choice of continuing with the feature at the risk of losing a portion of the total prize won to date or ending the feature and taking the total prize won to date. The portion of the prize which the player may forfeit if an unsuccessful outcome occurs if the player continues with the feature may be half the total prize accumulated up to the time of the unsuccessful outcome occurring.

10 Should the player wish to continue playing the feature, the outcome may be determined by the control means so that an average prize awarded for the feature, if the player continues with the feature, is approximately the same as the prize the player would get if the player chose to leave the feature. This has the benefit that it allows for an expected return to player percentage of the  
15 gaming machine to be accurately calculated without the level of uncertainty which results when player skill has an effect on the outcome.

To continue with the feature, the gaming machine may include a selecting means. The selecting means may be in the form of buttons on the midtrim of the gaming machine and/or icons arranged behind touch sensitive  
20 zones of the display means.

Should the player wish to terminate the feature, the player may press the appropriate button or touch the appropriate icon. The feature ends and the total amount on the prize meter may be transferred to a win meter of the gaming machine. Should the player wish to continue with the feature, the  
25 player may do so by pressing the appropriate button or touching the appropriate icon. The feature may continue with the risk that the following outcome may be an unsuccessful outcome. In that event, half the prize on the prize meter may be forfeited and the remaining half added to the win meter of the gaming machine. The feature is then at an end.

30 However, should the player continue with the feature and the outcome is successful, the resulting prize may be added to the prize meter and the player may then again be offered the option of continuing with the feature or terminating the feature as described above.

As indicated above, to eliminate true skill from the game, the average  
35 win may need to remain the same as a total accumulated win that is already displayed on the special prize meter of the second screen feature.

Accordingly, should the player desire to continue with the feature, the control means may determine the prize in the same way as for previous prizes awarded. Hence, a weighted random selection may be made to determine what outcome will be revealed and the size of the prize associated with that outcome. After the outcome has been determined, the probability of success may be determined by the following equation:-

$$P_s = (\text{Number of credits that may be lost}) / (\text{Number of credits that may be lost} + \text{New prize})$$

Accordingly, the probability of the following outcome being unsuccessful is dependent upon both the following outcome and the size of the prize that has so far been accumulated.

Once the probability of success has been determined using the above equation, the control means may make a random selection according to that probability to decide whether the outcome is successful or not.

According to a second aspect of the invention, there is provided a game to be played on a game playing apparatus, the game playing apparatus having a display means and a game control means arranged to control images displayed on the display means, the game further comprising a game feature where, upon being awarded at least one prize, a player is offered a choice and, if the choice results in a successful outcome, the feature continues but, if the choice results in an unsuccessful outcome, the feature ends and a portion of a total prize accumulated up to termination of the feature is forfeited.

A game playing apparatus includes one which does not require the wagering of a stake in order to play the game and further includes apparatus which is connectable to a network.

#### **Brief Description of the Drawings**

The invention is now described by way of example with reference to the accompanying diagrammatic drawings in which:-

Figure 1 shows a perspective view of a gaming machine, in accordance with the invention;

Figure 2 shows a block diagram of a control circuit of the gaming machine;

Figure 3 shows an initial screen display of a game feature of a game played on the gaming machine of Figure 1;

Figures 4 to 6 show subsequent screen displays of the game feature; and

- 5        Figure 7 shows a flow chart of a game played on the gaming machine of Figure 1 including the game feature of Figures 3 to 6.

#### **Detailed Description of the Drawings**

In Figure 1, reference numeral 10 generally designates a gaming  
10 machine, including a game, in accordance with the invention. The machine 10 includes a console 12 having a display means in the form of a video display unit 14 on which a game 16 is played, in use. The video display unit may be implemented as a cathode ray tube device, a liquid crystal display, a plasma screen, or the like. The game 16 is a spinning reel game which simulates the  
15 rotation of a number of spinning reels 18. A midtrim 20 of the machine 10 houses a bank 22 of buttons for enabling a player to play the game 16. The midtrim 20 also houses a credit input mechanism 24 including a coin input chute 24.1 and a bill collector 24.2.

The machine 10 includes a top box 26 on which artwork 28 is carried.  
20 The artwork 28 includes paytables, details of bonus awards, etc.

A coin tray 30 is mounted beneath the console 12 for cash payouts from the machine 10.

Referring now to Figure 2 of the drawings, a control means or control circuit 32 is illustrated. A program which implements the game and user  
25 interface is run on a processor 34 of the control circuit 32. The processor 34 forms part of a controller 36 that drives the screen of the video display unit 14 and that receives input signals from sensors 38. The sensors 38 include sensors associated with the bank 22 of buttons and touch sensors mounted in the screen of the video display unit 14. The controller 36 also receives input  
30 pulses from the mechanism 24 to determine whether or not a player has provided sufficient credit to commence playing. The mechanism 24 may, instead of the coin input chute 24.1 or the bill collector 24.2, or in addition thereto, be a credit card reader (not shown) or any other type of validation device.



Finally, the controller 36 drives a payout mechanism 40 which, for example, may be a coin hopper for feeding coins to the coin tray 30 to make a pay out to a player when the player wishes to redeem his or her credit.

Referring to Figure 3 of the drawings, an initial screen display of a game feature, in accordance with the invention, is illustrated and is designated generally by the reference numeral 50. The screen display 50 follows the triggering of a feature in an underlying base game of the game 16. As indicated above, the base game is the Applicant's "Outback Jack<sup>TM</sup>" game. In that base game, when a trigger condition occurs a second screen display is shown being a map of Australia. A number of icons are displayed on the map. Each icon represents a feature. One of the features is the game feature of the present invention and is indicated as a "Gold Mine" feature.

Should the player select the Gold Mine feature, the screen display 50 as shown in Figure 3 of the drawings appears on the video display unit 14 of the gaming machine 10. It is to be noted that the screen display represents a graphic representation of a mine tunnel 52 with an animated character, "Outback Jack", 54 in the tunnel 52.

In addition to a credit meter 56, a bet meter 58 and a win meter 60, a prize meter 62 is also displayed in the screen display. A payable 64 is also displayed in the screen display 50. The payable 64 shows the number of credits to be awarded if one of the minerals or precious stones in the payable are "dug up" by the character 54.

To start the feature, a "Start Feature" button from the bank 22 of buttons is pressed. The character 54 digs up a randomly selected item (a mineral or gem stone) and the appropriate prize is paid depending on the item dug up.

For example, as shown in Figure 4 of the drawings, the character 54 has dug up a ruby 66. From the payable 64, it is to be noted that a ruby 66 is worth 25 credits. The prize awarded is the number of credits associated with the item "dug up" multiplied by the bet. Therefore, in this case, the prize awarded is  $25 \times 20 = 500$  and 500 credits is credited to the prize meter 62.

The character 54 then digs up a second item 68 which is worth 2 credits as shown on the payable 64. Once again, the value of the item is multiplied by the bet one to provide the total prize awarded so that a prize of 40 credits is credited to the prize meter 62 as shown in Figure 5 of the drawings.

It will therefore be seen that the first two outcomes are guaranteed to be successful and no player choice is involved.

After the second prize has been paid, two icons 70, 72 are displayed on the screen display 50. The icon 70 is a "Leave" icon and the icon 72 is a "Dig" icon. The Dig icon 72 is selected by the player should the player wish to continue playing the game feature. Thus, a choice is offered to the player. The  
 5 player can either terminate the game feature by touching the Leave icon 70 or can continue playing the game feature by touching the Dig icon 72.

Should the player touch the Leave icon 70, the total prize credited to the prize meter (in this case a credit of 540 credits) would be applied to the win meter 60 of the gaming machine 10 and the feature would be at an end.  
 10 Should the player wish to continue playing the game feature, the player touches the Dig icon 72 and is afforded the opportunity of digging up further items potentially to increase the size of the total prize awarded in the feature but at the risk of forfeiting a portion of the total prize standing to the credit of the player on the prize meter 62.

15 In the illustrated example, it is assumed that the player touches the Dig icon 72 in an attempt to increase the total prize awarded in the game feature. As illustrated in Figure 6 of the drawings, the player achieves an unsuccessful outcome and the tunnel 52 collapses as illustrated by the rocks 70 in Figure 6 of the drawings. More importantly, the prize standing to the credit of the player  
 20 on the prize meter 62 is halved so that the previous prize of 540 is now 270 credits. The prize of 270 credits remaining on the prize meter 62 is credited to the win meter 60 and the game feature is at an end.

Had the player been successful in "digging" up a further item, the player would again then have been offered the opportunity of continuing with the  
 25 feature or terminating the feature. Theoretically, the feature can continue indefinitely so long as the player is successful with their "dig" attempts but in practice a limit of eight "digs" imposed including the first two digs.

The controller 36 determines whether or not, at each stage of the feature where the player is offered a "Leave" or "Dig" choice, the outcome will be  
 30 successful. Although, by offering the player a choice, it appears that player skill is involved, it is, more correctly, pseudo-skill. Pseudo-skill is used because it allows for the expected return to player percentage of the gaming machine 10 to be accurately calculated without the level of uncertainty that results when true skill has an effect on the outcome of the game.

35 Should the player decide to continue with the feature by touching the Dig icon 72, one of two things will happen. Either the character 54 will dig up

another item to increase the prize on the prize meter 62 or the tunnel or cave 52 will collapse.

To eliminate skill from the game 16, the average win for the feature needs to remain the same as the total accumulated win that is currently  
 5 displayed on the prize meter 62. Hence, when the player choose to continue with the game feature by touching the Dig icon 72, a prize is determined in the same way as for previous prized awarded. That is, a weighted random selection is made by the controller 36 to determine which item from the payable 64 will be revealed and, hence, the size of the next prize. After the  
 10 item has been determined, the probability of success, ie, whether the outcome will be successful or not, is determined by the following equation:

$$P_s = (\text{Number of credits that may be lost}) / (\text{Number of credits that may be lost} + \text{New prize}).$$

15

The probability of the outcome being unsuccessful in that the tunnel 52 collapses is therefore dependent upon both the next item selected from the payable and the size of the total prize that has so far been accumulated on the prize meter 62.

20 Once the probability of success has been determined in this way, a random selection is made according to that probability to decide whether the player has a successful or unsuccessful outcome, the latter ending the feature.

For example, if the player is lucky enough to get the maximum prize of 100 as shown on the payable 64 twice in a row before deciding to continue  
 25 with the feature by touching the Dig icon 72, then, if the 25 credit item is selected as the third prize, the player would have a 20 percent chance of winning half the current prize on the prize meter 62, ie. a prize of 100 credits, in that the outcome is regarded unsuccessful and is designated as such by the tunnel 52 collapsing. Conversely, the player has an 80 percent chance of  
 30 having a successful outcome in which case the total prize would be 225 credits.

On average, this works out to be exactly the same as if the player had selected to end the feature by touching the Leave icon 70 after twice winning the 100 credit prize.

Accordingly, it is an advantage of the invention that a game feature is  
 35 provided which includes apparent player skill thereby resulting in greater

interaction by a player with the game such that the player feels that he or she has an effect on the outcome of the game.

It is a further advantage of the invention that the mathematics is selected so that the expected return to player percentage of the gaming machine 10 can be accurately calculated without the level of uncertainty that results when real skill has an effect on the outcome of the game.

It will be appreciated by persons skilled in the art that numerous variations and/or modifications may be made to the invention as shown in the specific embodiments without departing from the spirit or scope of the invention as broadly described. The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive.

Dated this twenty-ninth day of October 2002

Aristocrat Technologies Australia Pty  
Ltd

Patent Attorneys for the Applicant:

F B RICE & CO

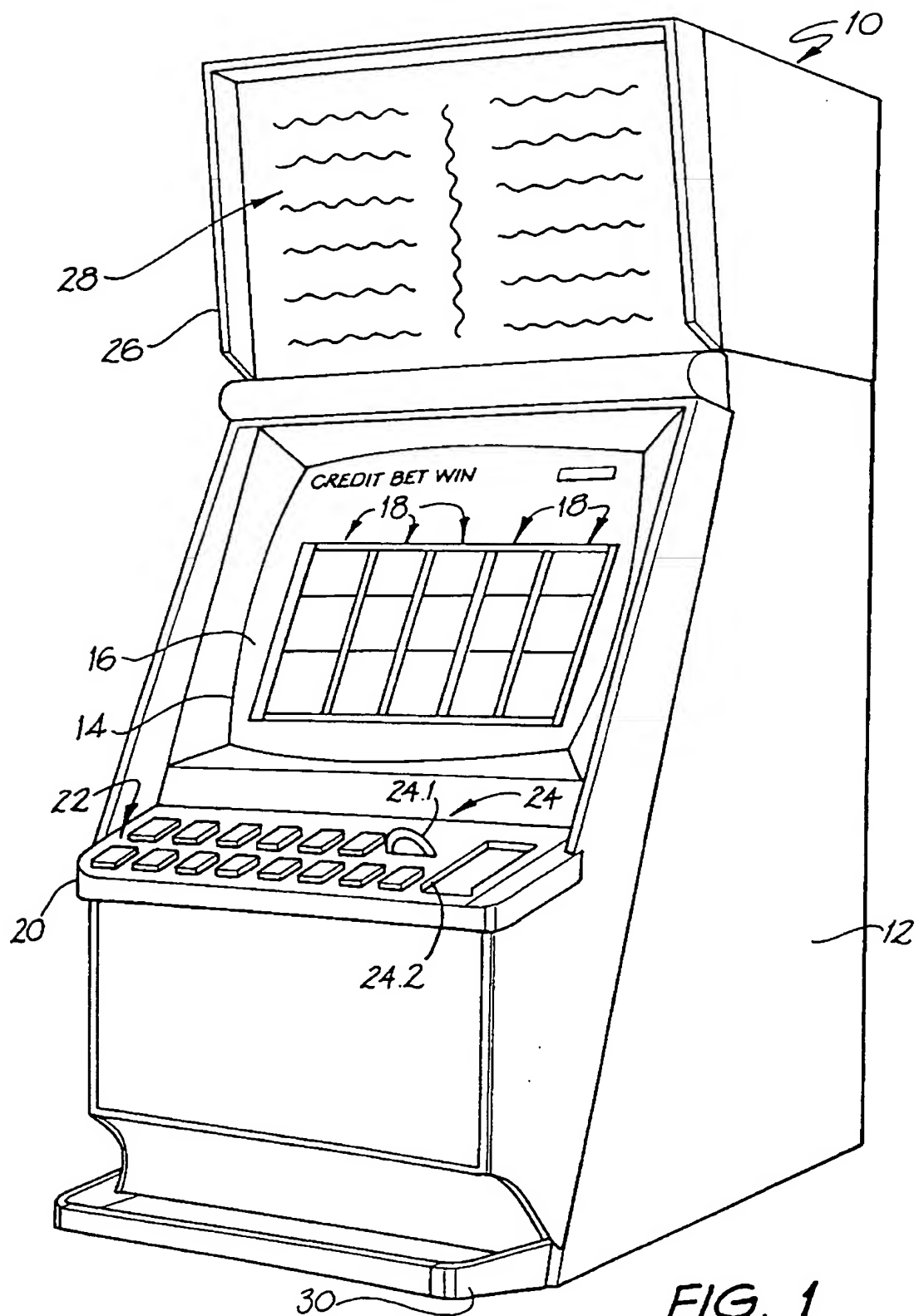


FIG. 1

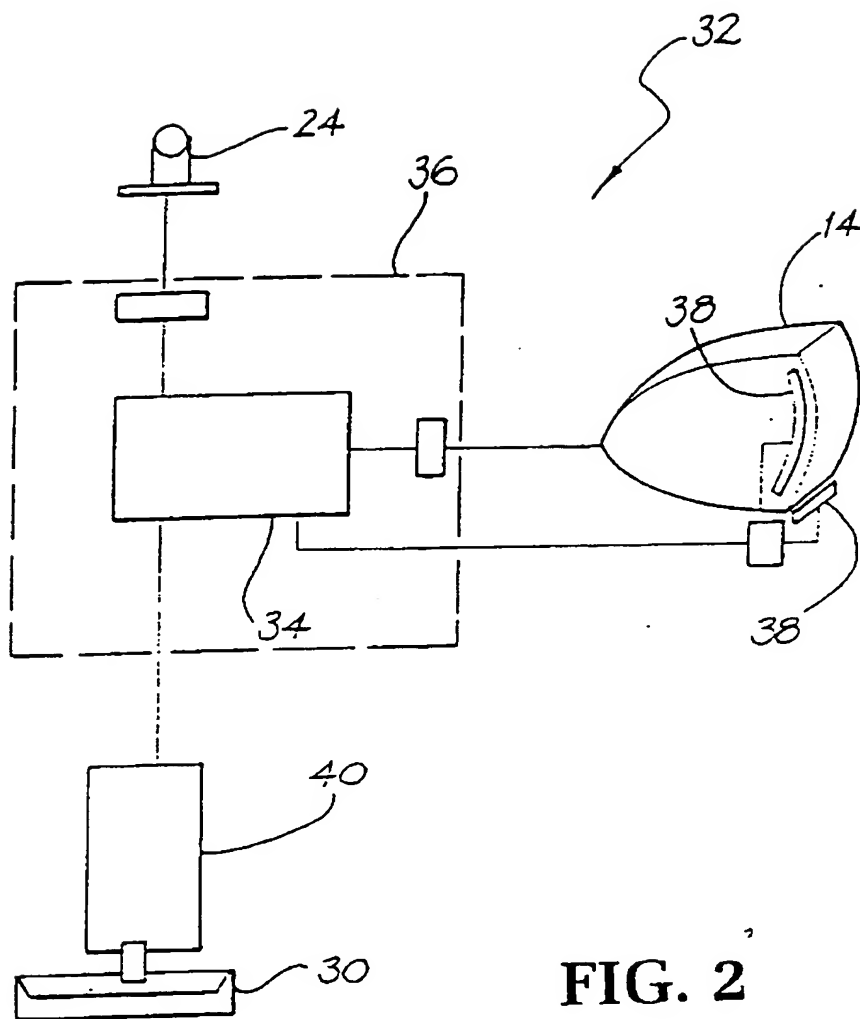
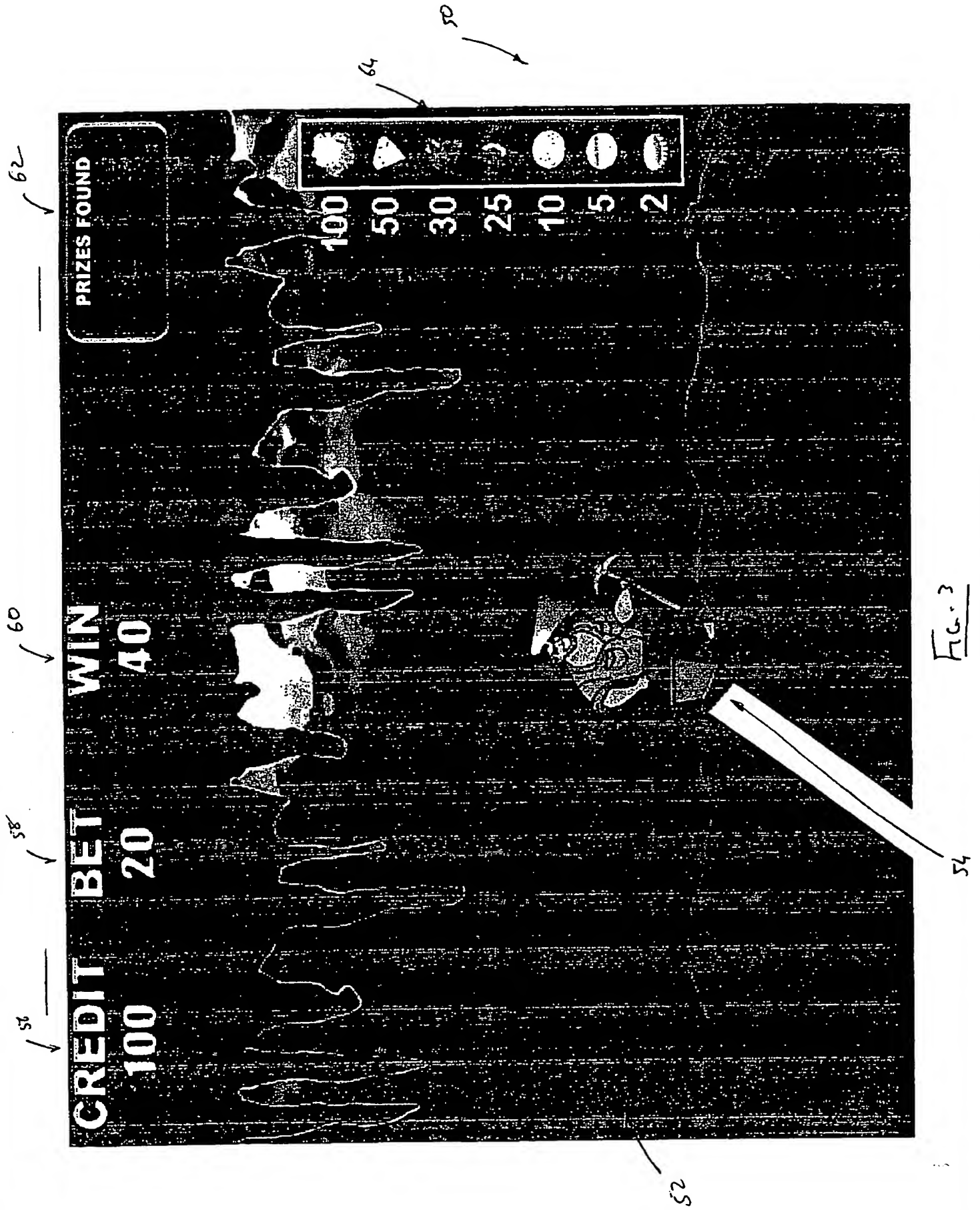


FIG. 2



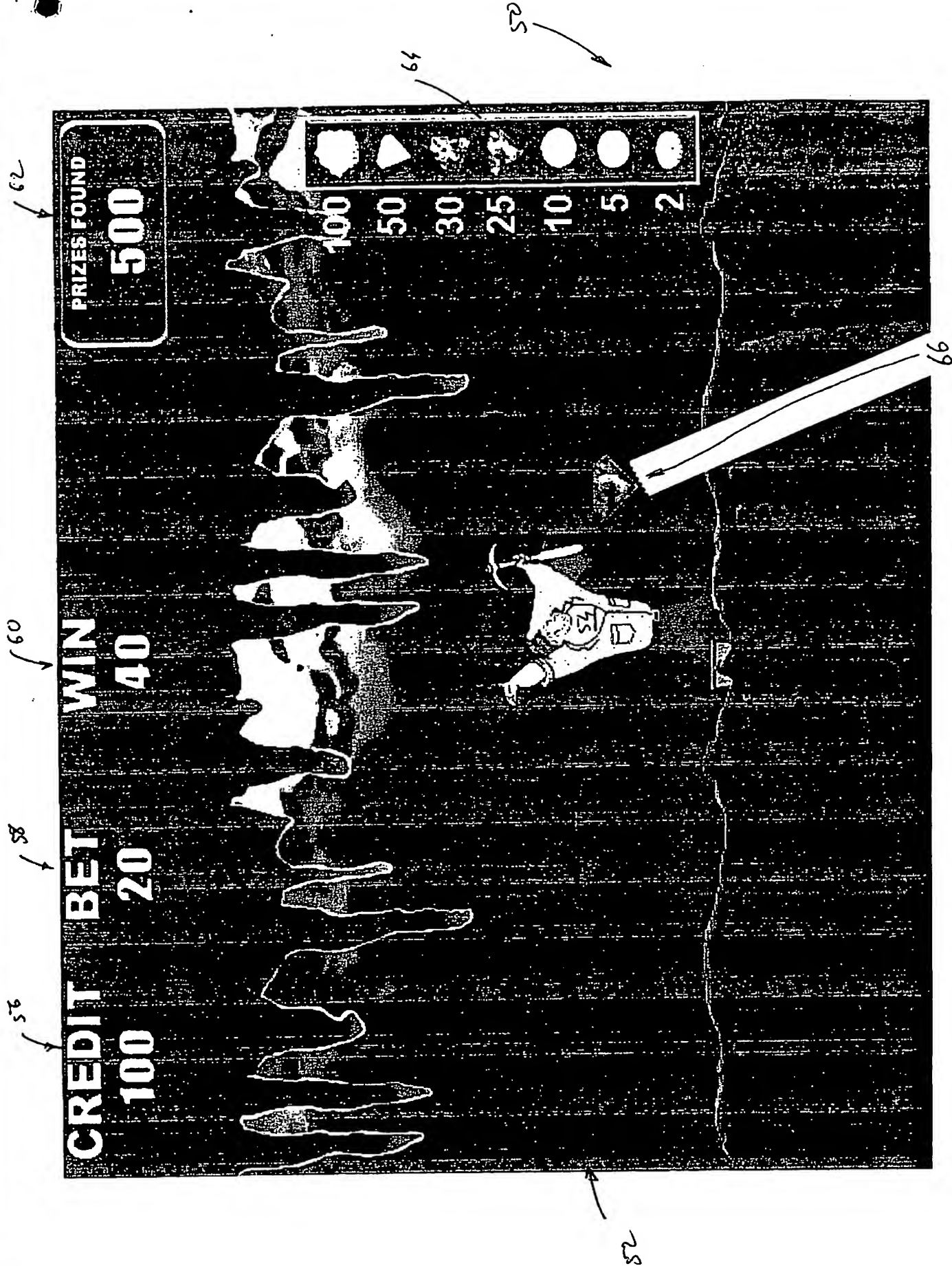
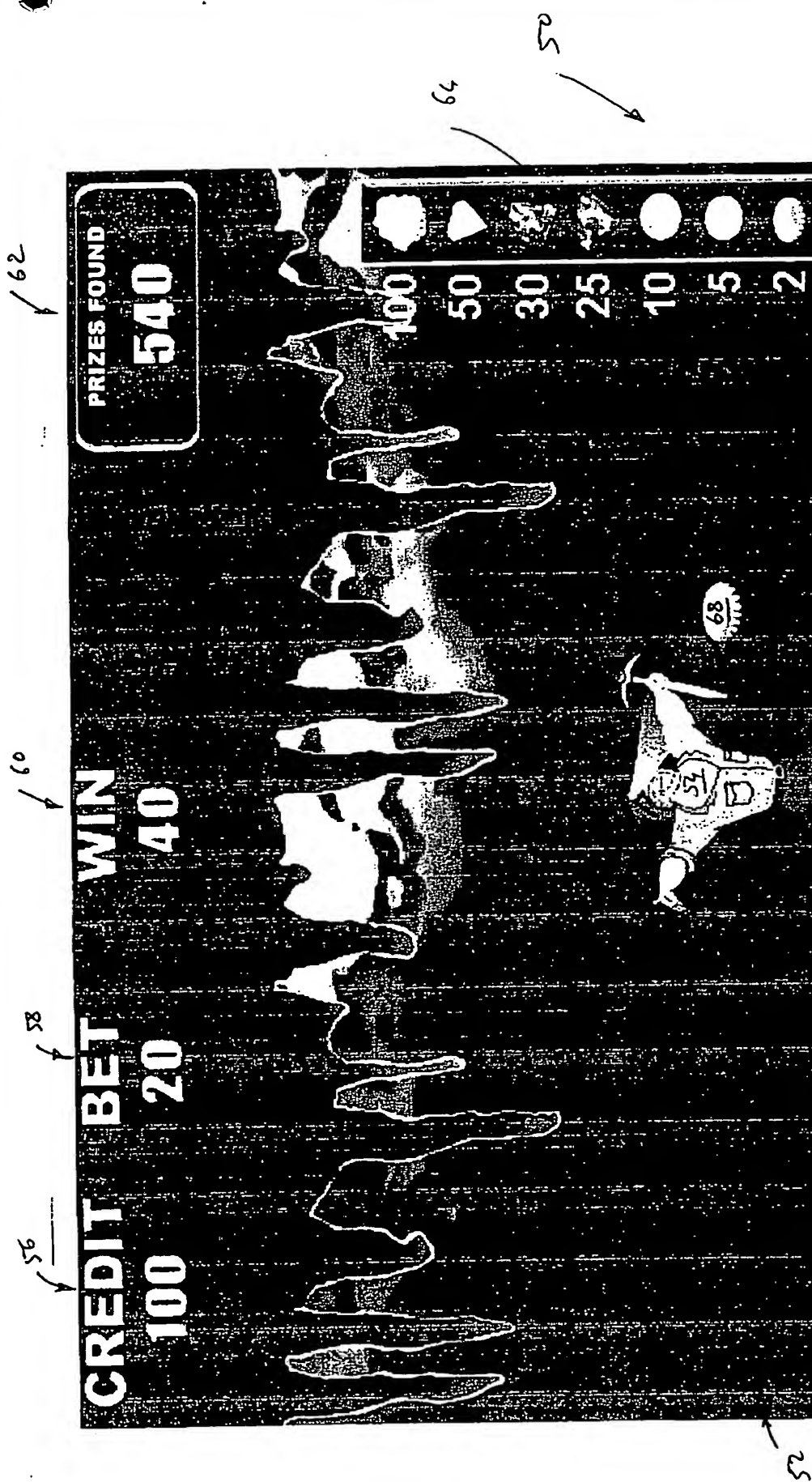


Fig. 4





CREDIT

410

BET

20

WIN

310

PRIZES FOUND

270



FIG-6

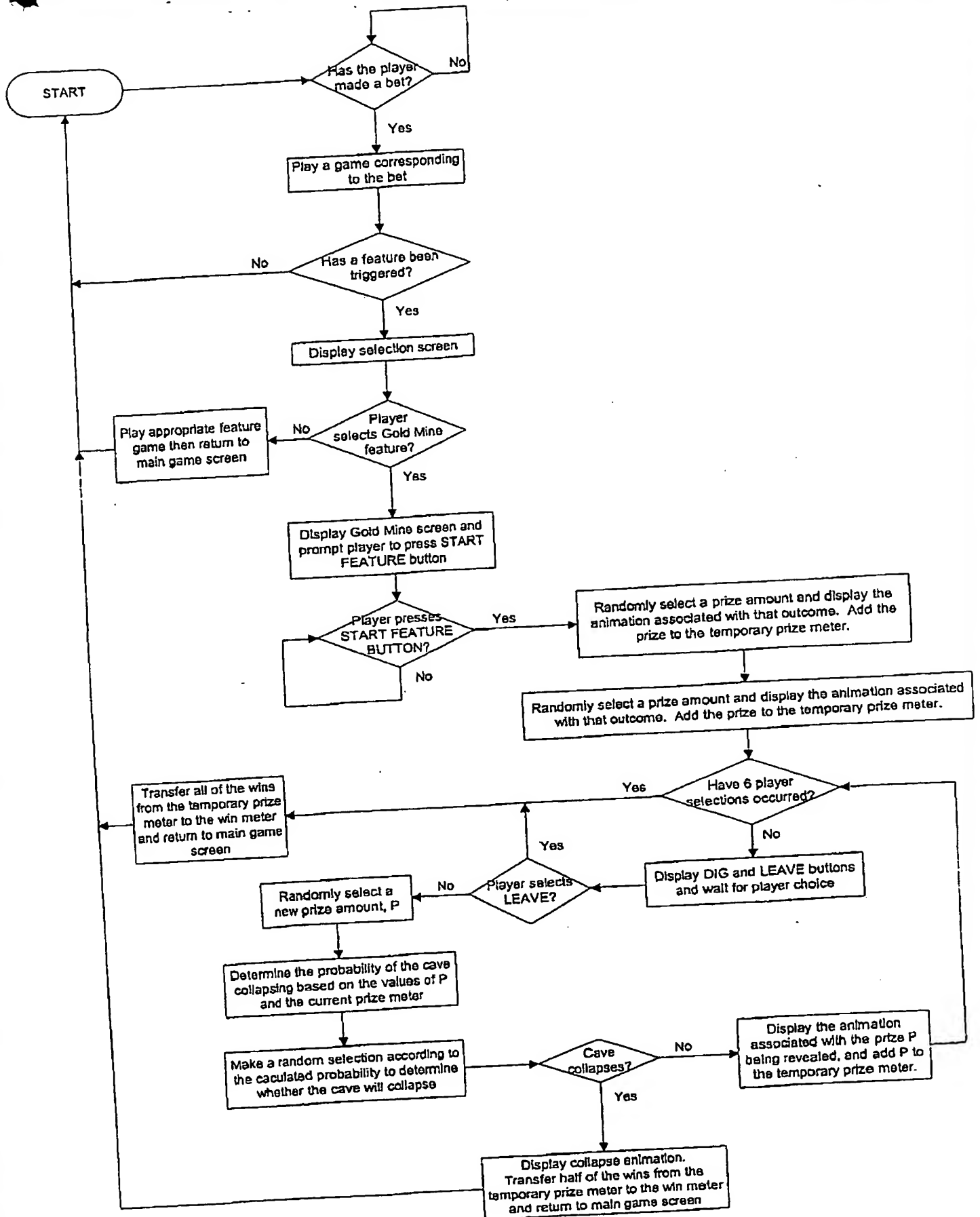


FIG. 7